CP-2 Report of Investigation
50415041

REPORT OF INVESTIGATION

Coppermine Problem Area

White Mesa Copper Mining District

Prepared by:

Eunice L. Tso, Geologist I

May 15, 1990

Tuba City Sub-Office

Navajo Abandoned Mine Land Reclamation Department

Division of Natural Resources

I. SIGNATURE APPROVAL SHEET:

Prepared by : _____
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III. INTRODUCTION

The Navajo Abandoned Mine Land Reclamation Department (NAMLRD) has identified an area within the Coppermine Chapter, of the Navajo Reservation, as eligible Abandoned Mine Lands (AML). Under Public Law 95-87, section 409. "Surface Mining Control and Reclamation Act" (SMCRA), the U.S. Department of Interior, Office of Surface Mining Reclamation and Enforcement (OSMRE), gives authorization and provides funds for reclamation of abandoned mine lands, having been mined prior to August 2, 1977, that constitute a hazard to the public health, safety and general welfare.

An investigation of Coppermine AML District by NAMLRD was initiated on February 22, 1990 and completed on April 13, 1990. All mining disturbances were located and all hazards documented. The results of the investigation concluded that there are 37 AML sites in the Coppermine District. Of the 37 sites, 10 sites are considered priority I, 7 sites are considered priority II and the remaining 20 sites have been given a priority III status. Hazards associated with these sites include: highwalls, vertical openings, unstabilized portals, and industrial and residential waste.

The Coppermine Chapter residents have requested assistance in abatement of these hazards as early as February of 1985, and have since passed a resolution dated March 12, 1988, requesting OSMRE and NAMLRD to consider Coppermine AML District as a reclamation project.

IV. AREA DESCRIPTION

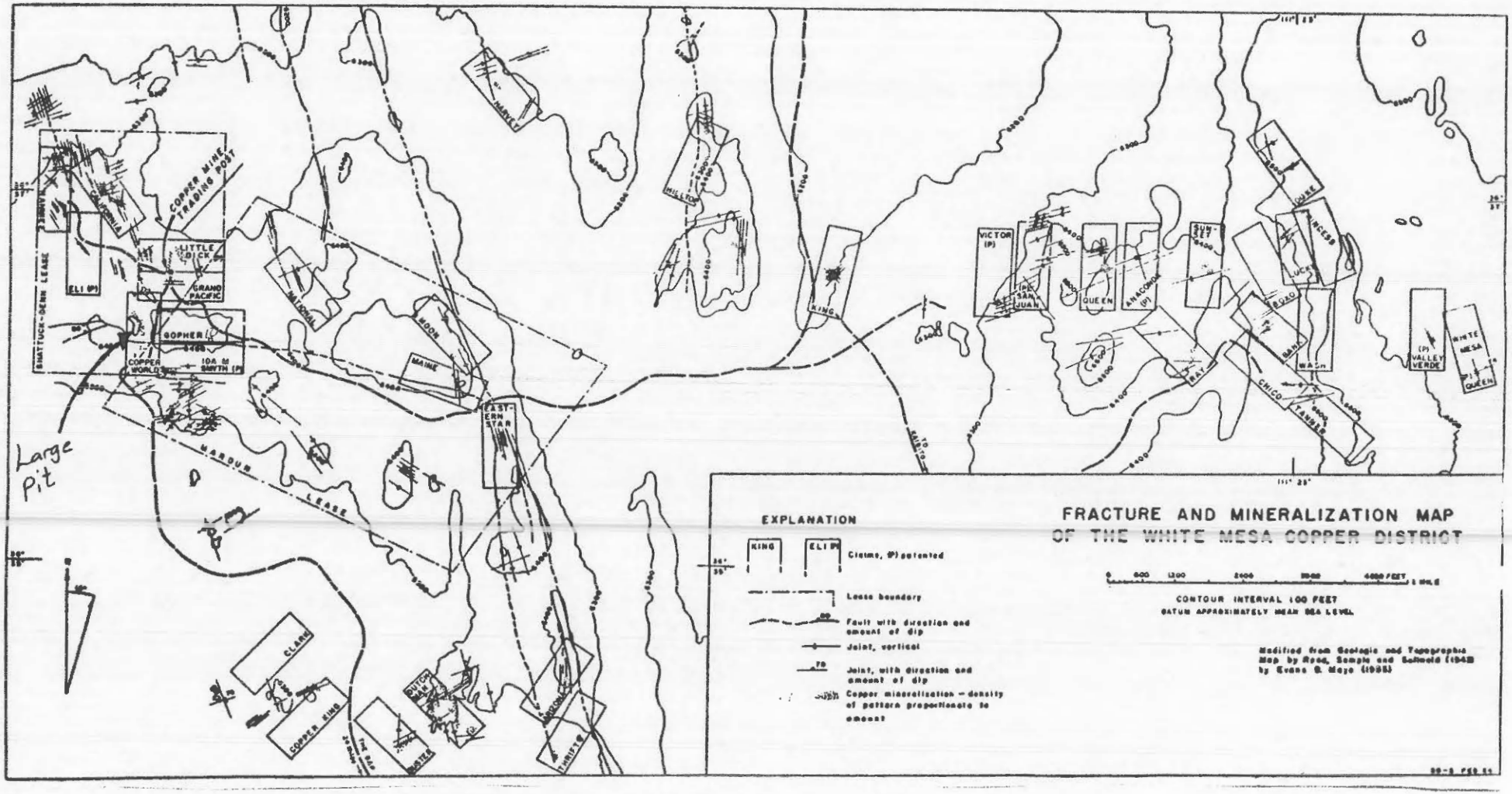
A. Location of Area:

The Coppermine AML District, previously known as the White Mesa Mining District, is located in north-central Arizona, approximately 20 miles south of Page, Arizona, and is accessible by Coppermine Road. The 37 AML sites, including over 100 disturbed acres, is encompassed within a larger area of 12 square miles, beginning near the old Trading Post and extending eastward and southward. 37 claims were staked prior to the 1934 western extension of the Navajo Reservation (see Map 1): Nine claims are patented and remain private land, the remaining 28 unpatented claims have been voided by the U.S. Bureau of Land Management, on May 23, 1988, for failure to file evidence of annual assessment (Appendix A).

B. Geography:

The Coppermine AML District lies in north-central Arizona in Coconino County and is located within the Coppermine Chapter, Grazing District 1, of the Navajo Indian Reservation. The Coppermine AML District is on the western margin of the Kaibeto Plateau in an unsurveyed area of T38N, R9 and 10E. The area can be located on two U.S.G.S. 7½ minute quadrangles: Dead Monkey Ridge, AZ: southcentral and southeast sectors and; Dove Spring, AZ: northcentral sector.

The mean elevation is 6,400 feet and the local relief is approximately 640 feet. Annual precipitation averages less than 10 inches.



MAP 1
(U.S.G.S. 1953)

C. Demographics:

The population of the rural Coppermine District is estimated to be 2,000. The majority of the population depends upon livestock as a method of economic support. A small percentage is employed in Page, Arizona, and by a local power plant near Page. Land-use is primarily grazing.

D. Mining History:

Mining claims were originally located in 1882 by Thomas Keams and associates before the segregation of the Navajo Tribal Indian Lands, and resulted in the location of 40 claims, of which 37 were recorded (U.S.G.S. 1955).

First attempts to mine the area were made by Mormon settlers in the late 1800's. They were able to locate some of the mining claims and open known ore bodies. An unknown but relatively small tonnage of high grade ore was recovered (U.S.G.S. 1943).

From 1917 to 1918, the Navajo Copper Company produced a high grade ore which yielded 145 tons of copper. From 1939 to 1940, the Coconino Copper and Chemical Company produced 400 tons of copper sulfate from a 3.13% ore (U.S.G.S. 1955).

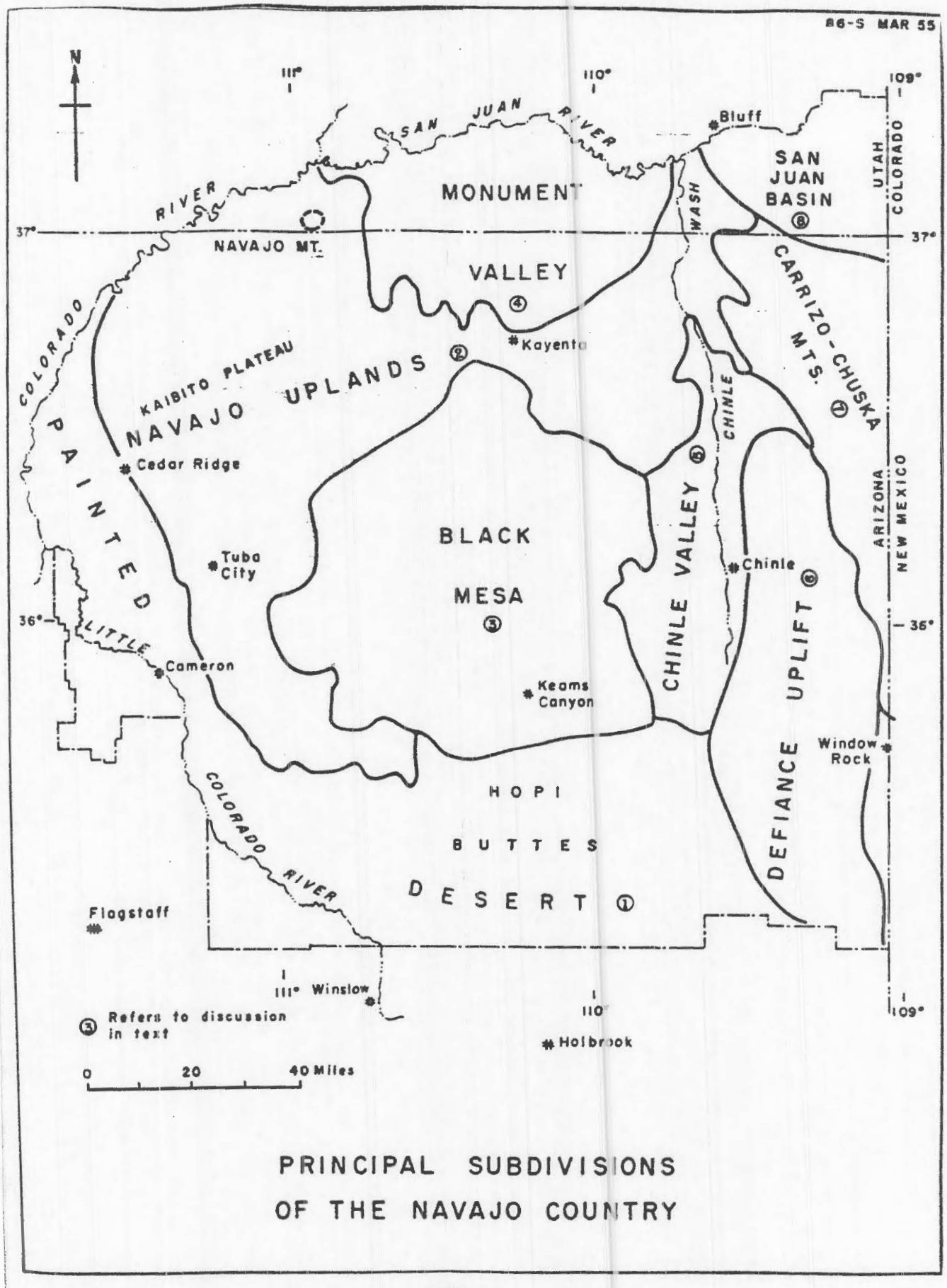
In 1942, the Mardun Company was formed and attempted to develop a large tonnage of low grade ore using a dry concentration process. Also that same year, Shattuck Denn Mining Corporation, who acquired tax titles of claims as early as 1926, conducted an extensive exploratory drilling program within their lease. An option from the Mardun Company on their lease was obtained by Coronado Copper and Zinc Company in 1943. Their engineers subsequently reported a less favorable appraisal than

the Mardum Company (U.S.G.S. 1955).

Zontelli Mining Company acquired title to the claims and obtained a lease in 1962 from the Navajo Tribe, thus obtaining mining rights to the entire northwest portion, of the district. The White Mesa Company took over the claims in 1965 and received additional leases to cover the entire district. Although records are not available, it is known that a considerable amount of copper ore was removed from the Inspiration Claim (site 8) during the tenure of the Zontelli and White Mesa Companies. Heap leaching was the method used by the two companies for extracting the copper ore. Tin cans, scrap metal, cement structures, and tailings are remnants of the old mill site located south of the Inspiration Claim. All mining ceased by 1967 (Per Navajo Minerals Department).

E. Geology:

The Coppermine AML District is part of the physiographic province designated as the Colorado Plateau. The Navajo country of Arizona-Utah comprises of eight principal subdivisions (Harshbarger, 1949). The Coppermine District lies in the northern portion of the Navajo Reservation within a subdivision known as the Navajo Uplands (see Map 2). This subdivision is characterized largely as a sandcovered terrace plain lying above an elevation of 6,000 feet. The rocks within this subdivision are mainly that of the Navajo Sandstone. The Navajo Sandstone is a member of the Glen Canyon Group and is the host rock of the copper ore. The sandstone is highly cross stratified and friable; its quartz grains are very well rounded and sorted,



PRINCIPAL SUBDIVISIONS
OF THE NAVAJO COUNTRY

MAP 2
(U.S.G.S 1953)

and vary in diameter from 0.5mm to 0.15mm in a matrix of calcareous, siliceous, and clayey cements. In several locations within the Coppermine District, over 200 feet of the Navajo Sandstone is exposed.

The regional structure is characterized by north trending, monoclines, anticlines, and normal faults. The local structure is that of a complex fracture system. In the western part of the district faults trend north-northwest. Sheeted zones traversed by parallel to subparallel faults are marginal to the major fissures. A set of joints trending northeast intersects the dominant fissure and contribute to the complex fracture system. In the central and eastern portions of the district, northeast trending master joints are the major dominant fissure (U.S.G.S. 1943).

Mineralization tends to occur within the joints and faults and is probably a result of copper precipitation from paleogroundwater solution, not from hydrothermal solutions. As such, the mineralization was controlled by groundwater paths through the Navajo Aquifer during the late Mesozoic or early Cenozoic Eras. Carbonate and silicate copper minerals are the original precipitates as solutions reacted with the carbonate and/or silica cement within the sandstone, not the result of sulfide oxidation (Stevens, 1987).

Copper carbonates and silicates, including malachite and chrysocolla, are the dominant copper constituents. Copper minerals occur in the sandstone interstices and range from very weak mineralization, with a few isolated mineral grains to entire available pore space cemented with copper minerals. Ore grade

ranged up to 15% copper but averaged less than 1% copper.

F. Hydrology:

Ground water in the Coppermine District is obtained from the N-aquifer system, consisting of the Navajo Sandstone, Kayenta Formation, Moenave Formation and the Lukachukai Member of the Windgate Sandstone. The aquifer is composed of an alternating sequence of fine grained sandstones and siltstones and ranges in thickness from 350 feet to more than 1,400 feet. The Navajo Sandstone is the principal water bearing unit for all wells in the area.

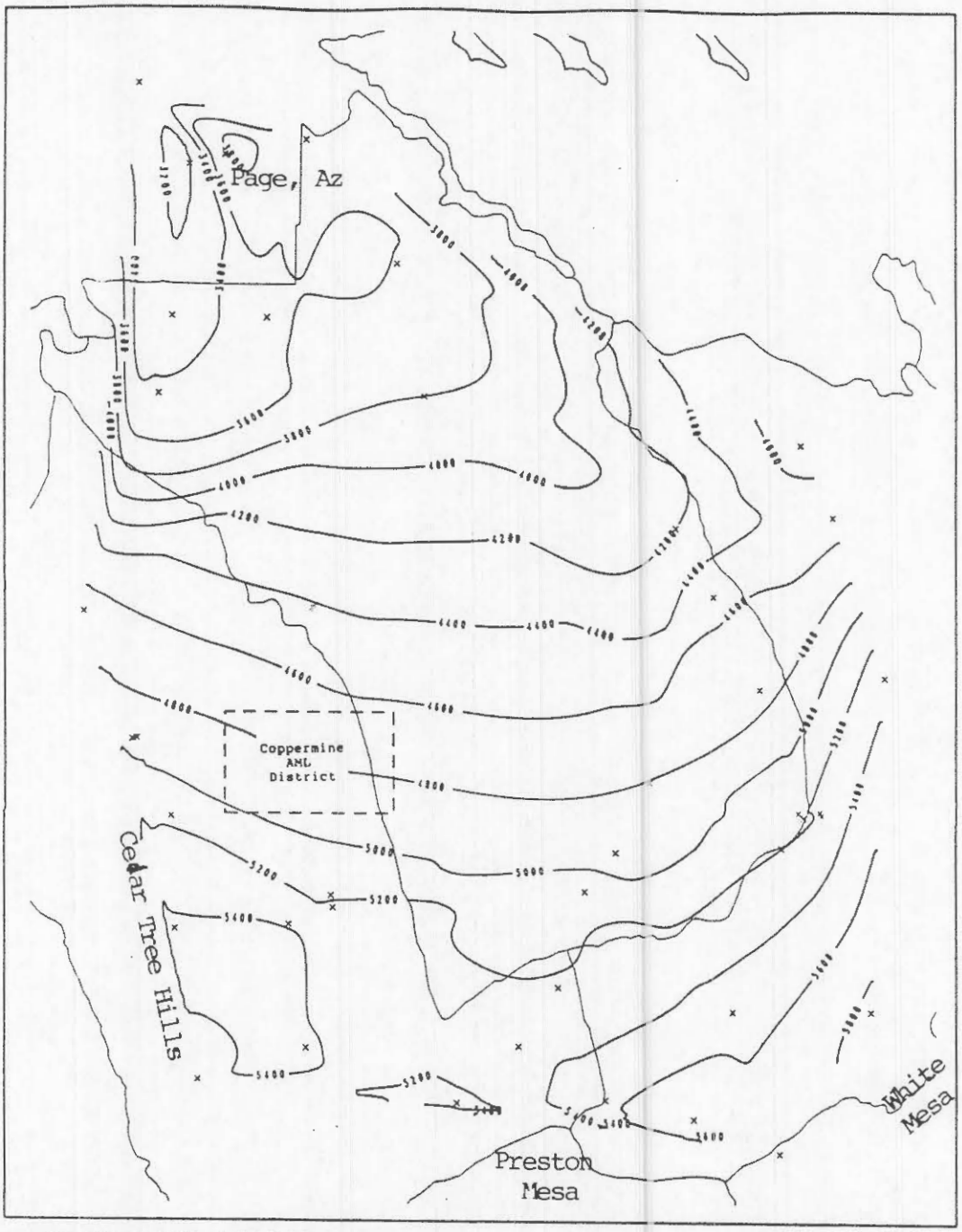
Regional flow of the N-aquifer, in the District, originates at a ground-water divide south and southeast of the District (Map 3). The divide extends west from White Mesa through the north edge of Preston Mesa, then northwest to Cedar Tree Hills. Ground-water flow is to the north and northwest to Lake Powell and the Colorado river. Ground water is under unconfined conditions in the district, with depth to water approximately 1,000 feet.

Wells in the district yield from 1 to 80 gal/min. Northeast of the district, at least five dry holes have been drilled in the Navajo Sandstone; the holes range in depth from 902 to 1420 feet. A zone of faulting associated with a north trending anticline has apparently created an area where the Navajo Sandstone is unsaturated, with flow occuring in the lower units of the N-aquifer system (McClymonds, 1961).

Ground water is used for public supply and domestic and livestock uses. The chemical quality of the water in this area

Potentiometric Map of the N-Aquifer System

COPPERMINE CHAPTER AND VICINITY



COPPERMINE PROBLEM AREA

1: 312,500

MAP 3

- POTENTIOMETRIC SURFACE CONTOUR
- CHAPTER BOUNDARIES
- COPPERMINE DISTRICT BOUNDARY
- WATER WELL LOCATION

is very good, with specific conductivity generally ranging from 180 to 300 microhos per centimeter at 25 degrees celcius. Calcium and bicarbonate are the dominant ions in water from the N-aquifer in the area (Farrar, 1979).

V. PURPOSE OF INVESTIGATION

Under Public Law 95-87, Section 409, "Surface Mining Control and Reclamation Act", Department of Interior, Office of Surface Mining Reclamation and Enforcement provides funds and gives authorization to the Navajo Tribal President, and thus to the Navajo AMLRD Department, for investigation and eventually abatement of hazards resulting from mining operations which took place prior to August 2, 1977, for which there is no reclamation responsibility on the part of the operator.

The Coppermine AML field investigation and inventory was implemented for the purpose of locating and documenting all disturbances resulting from past mining activities and to identify those sites that constitute a hazard to the health, safety and welfare of the public and/or degrade the environment.

The investigation has concluded that many AML sites pose danger to the public and that some sites do present an imminent threat to life. Therefore, these sites will be proposed for reclamation.

VI. METHOD OF INVESTIGATION

Reports on copper occurences and copper mining in the White Mesa Mining District were located at the Arizona State Department of Mines, the U.S. Bureau of Land Management, and the Navajo

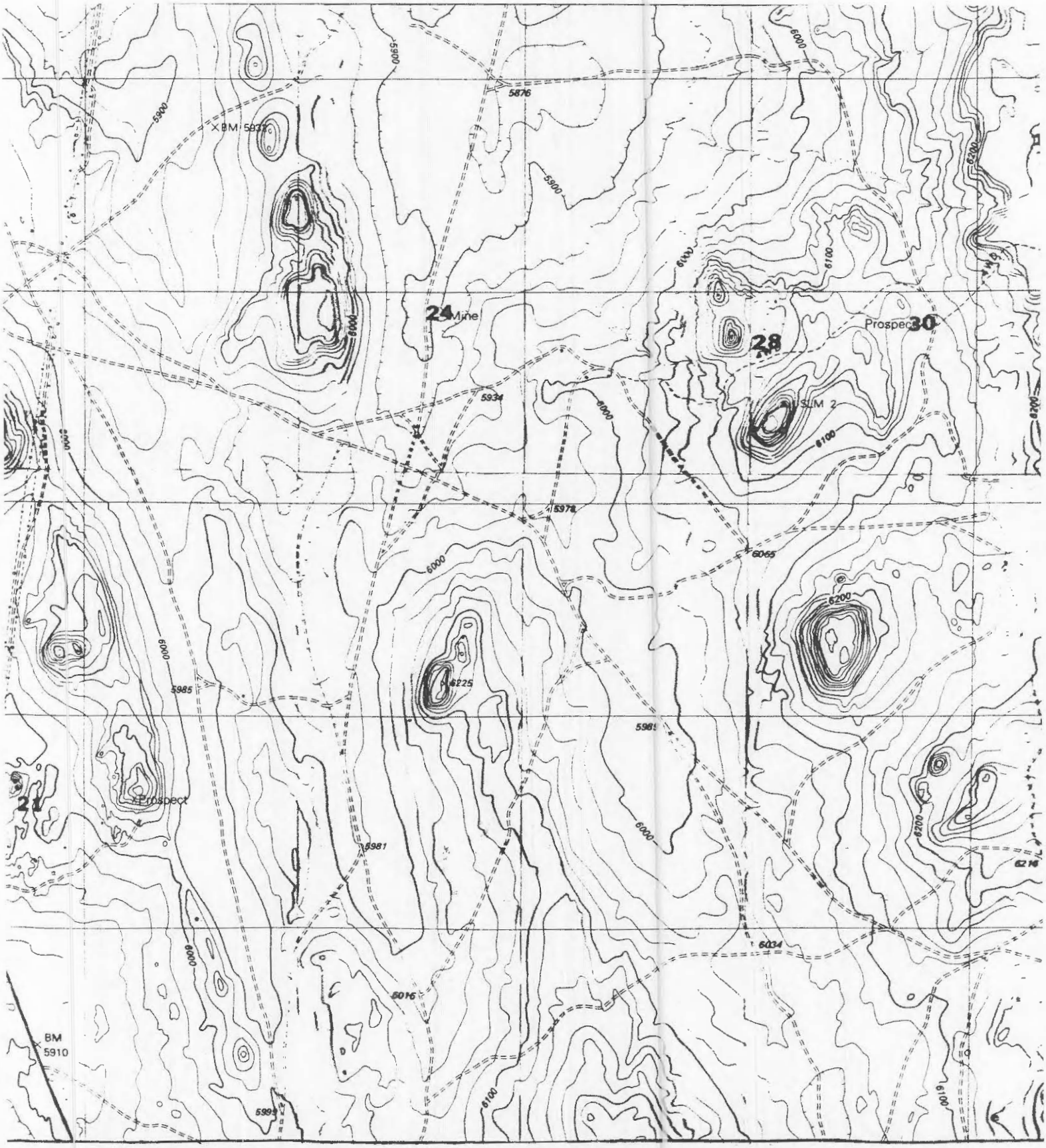
Department of Minerals. Those reports included maps of claims, mineral occurences, and ore bodies. The claims and known ore bodies were transfered to U.S.G.S. 7½ minutes quadrangles and were then located as mining disturbances. All mining disturbances were maped and grouped into sites based on their proximity to one another (see Map 4). All sites were then documented on Navajo AML Priority Inventory Forms and OSMRE Update Problem Area Data Sheets, and photographed.

The Coppermine Chapter residents were informed at a March 1990 Chapter Meeting as to Navajo AML Department's plans for reclamation in their area. Several residents have been interviewed regarding the AML sites and have been helpful in locating them.

As early as 1985, the Chapter residents requested assistance in eliminating these hazards, as seen in the letter to NAMLRD, dated April 3, 1985 (Appendix B). Since then, the Coppermine Residence have passed a Chapter Resolution, dated March 1988, formally requesting OSMRE and Navajo AMLR Department to include Coppermine as an AML reclamation project (Appendix C).

VII. SUMMARY OF FINDINGS

A total of 37 AML sites have been identified in the Coppermine AML District. Of the 37 sites, 10 are considered priority I, 7 sites are considered as priority II, and the remaining 20 sites are priority III. Many sites include more than one feature, but were grouped together as one site based on their proximity to one another. A complete summary of the



ıe AML District

MAP 4

LE 1:24 000

0 1 MILE

3000 4000 5000 6000 7000 FEET

0 1 KILOMETER

INTERVAL 20 FEET

C VERTICAL DATUM OF 1929

ROAD CLASSIFICATION

Light-duty road, all weather, improved surface

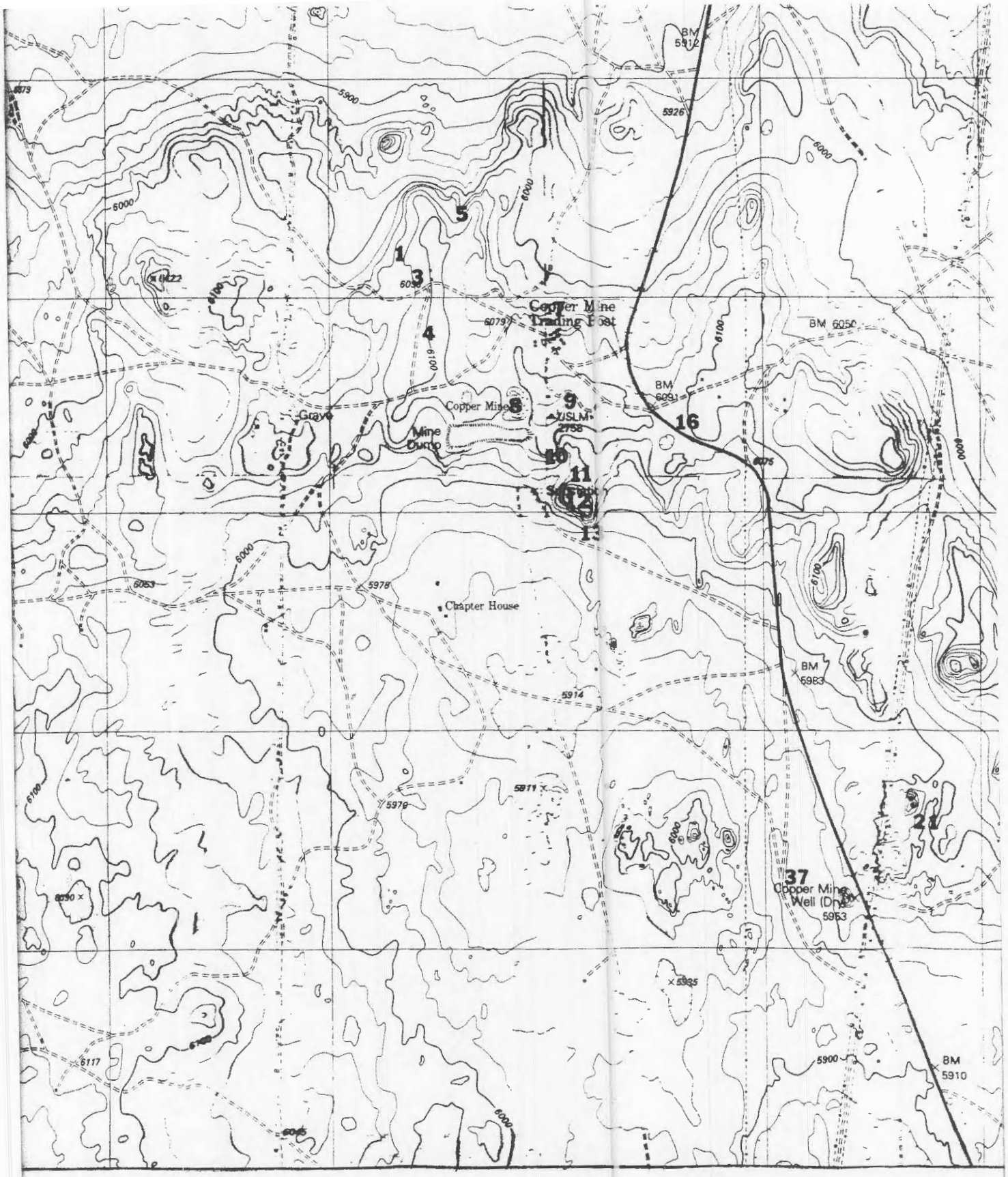
Unimproved road, fair or dry weather

GN

0°16'
5 MILS

13½°
240 MILS

UTM GRID AND 1982 MAGNETIC NOR
DECLINATION AT CENTER OF SHEE



AD MONKEY RIDGE, ARIZ.
N3637.5–W11122.5/7.5

DOVE SPRING, ARIZ.
N3630–W11122.5/7.5

1982

DMA 3757 III SW—SERIES V898

Coppermine AM

MAP 4

SCALE 1:24 000

1000 0 1000 2000 3000 400

CONTOUR INTERVAL 20
NATIONAL GEODETIC VERTICAL DA

SITE NO.	SITE NAME	SITE DESCRIPTION	PRIORITY RANKING	HIGHWALL	VERTICAL OPENING	ADIT/ PORTAL	HUMAN SITE VISITATION	EASILY ACCESSIBLE	¼ MILE FROM RESIDENCE	ENVIRON. DEGRADATION	ATTRACTIVE NUISANCE	ACRES IMPACTED
1	NANNIE E. #1	4 pits, small rim strips and waste piles	2		Y					Y		.4
2	NANNIE E. #2	prospect	3							Y		.2
3	NANNIE E. #3	pit	2		Y			Y		Y		.1
4	ELI	3 pits & concrete foundations for processing site	2		Y		Y	Y	Y	Y	Y	5
5	PROSPERITY	prospect-adit, 2 pits 2 trenches & rim strip	2			Y				Y		1.2
6	LITTLE DICK #1	prospect trench	3							Y		.1
7	LITTLE DICK #2	shaft, 2 trenches with small adit, & waste piles	1	Y	Y	Y	Y	Y	Y	Y		2.1
8	INSPIRATION	large pit, large waste pile & processing site	1	Y			Y	Y	Y	Y	Y	80
9	STATE	15' shaft with associated prospect	1		Y			Y	Y	Y		.3
10	IDA SMYTH	deep shaft	1		Y				Y	Y		.1
11	WHITE MESA #1	trench, 3 small pits & rim strip	2	Y	Y				Y	Y		2.4
12	WHITE MESA #2	3 deep shafts & 1 pit	1		Y				Y	Y		1.4
13	WHITE MESA #3	adit/portal	1			Y	Y	Y	Y	Y	Y	.1
14	CLARK	prospect	3							Y		.1
15	NATIONAL	trench	3							Y		.3
16	WHITE MESA	2 shafts	2		Y		Y	Y	Y	Y		.1
17	MOON	rim strip	3						Y	Y		4.1

SITE NO.	SITE NAME	SITE DESCRIPTION	PRIORITY RANKING	HIGHWALL	VERTICAL OPENING	ADIT/ PORTAL	HUMAN SITE VISITATION	EASILY ACCESSIBLE	¼ MILE FROM RESIDENCE	ENVIRON. DEGRADATION	ATTRACTIVE NUISANCE	WATER IMPACTED
18	HARVEY	2 small pits & trench with trash	3				Y		Y	Y		.4
19	MAINE	trench with spoil	3							Y		.1
20	EASTERN	2 trenches & rim strip with waste pile	3							Y		1.6
21	DUTCHMAN	15 pits, 2 trenches, prospect adit & rim strips with waste	1	Y	Y	Y	Y	Y	Y	Y		11.2
22	ARIZONA	prospect	3							Y		.4
23	HILLTOP	rim strip	3							Y		.2
24	KING	deep pit with small pit & trench & waste piles	1	Y	Y			Y		Y		1.4
25	VICTOR	small pits	3						Y	Y		1
26	SAN JUAN	pit, trench rim stip	3						Y	Y		.7
27	QUEEN 1	prospect & rim strip	3							Y		.8
28	QUEEN 2	deep shaft	1		Y				Y	Y	Y	.1
29	ANACONDA	pit	3							Y		.1
30	SUNSET	prospect adit with trench	2			Y				Y	Y	.7
31	RAY	prospect rim strip & trench	3							Y		.3
32	DUKE	trench	3							Y		.1
33	LUCKY #1	trench	3							Y		.1
34	BOZO	trenches & rim strip	3							Y		.7
35	LUCKY #2	rim strips & trenches	3							Y		.1
36	NASH	rim strip & trench	3							Y		.7
37	BUSTER	deep shaft	1		Y		Y	Y	Y	Y		.1

field inventory and priority ranking may be seen in Table 1.

The criteria used in ranking these sites included: 1) highwalls; 2) vertical openings; 3) adits/portals; 4) evidence of site visitation; 5) accessibility; 6) proximity to residence; 7) environmental degradation; and 8) attractive nusiance.

A site was automatically characterized as priority II if it included a highwall, vertical opening or portal. Other criteria including: a) level of danger; b) evidence of site visitation; c) accessibility; and d) proximity to local residence, were used to determine whether a site remained a priority II or whether it was upgraded to a priority I. Sites not exhibiting highwalls, vertical openings, or portals, and presenting no imminent danger to the public, will not be proposed for reclamation at this time.

VIII. RECOMMENDATIONS

Of the 37 sites, 10 priority I and 7 priority II sites, will be proposed for reclamation based on the hazards they present to the public and their proximity to residence and public places.

Reclamation plans for all shafts and pits will primarily entail backfilling all vertical openings and dangerous highwalls. Volumes of pits and shafts will be determined so that the amount of earth movement and cost may be obtained. The cost estimates in Table 2 have been produced using OSMRE national inventory standards. Of the 17 sites, 16 sites may be done in-house by NAMLRD staff and temporary labor. Site 8 may be contracted

TABLE 2
PROPOSED RECLAMATION PROJECTS
FOR COPPERMINE AML SITES

SITE NO.	SITE DESCRIPTION	ACRES	CONCEPTUAL PLAN	COST ESTIMATE
1	4 pits	.5	backfill/revegetation	$ 4,000
3	1 pit	.2	backfill/revegetation	$ 2,000
4	1 large pit	.5	backfill/revegetation	$ 12,000
5	trench & adit	.4	backfill/revegetation	$ 7,000
7	shaft, 2 trenches	2.1	backfill/revegetation	$ 26,000
8	large pit with large volume of waste & abandoned mill site	80.0	placement of mill/dump components into pit, backfill/revegetation	$1,200,000
9	15' shaft	.1	backfill/revegetation	$ 2,000
10	36' shaft	.1	backfill/revegetation	$ 2,700
11	3 pits, 1 trench	2.4	backfill/revegetation	$ 14,000
12	three 50' shafts	1.4	backfill/revegetaton	$ 6,000
13	adit	.1	grate installation	$ 3,000
16	two 4-8' shaft	.1	backfill/revegetation	$ 2,000
21	15 pits, 2 trenches with prospect adit & waste	11.2	backfill/revegetation	$ 36,000
24	45' pit, smaller pit & trench with waste	1.4	backfill/revegetation	$ 16,000
28	192' shaft	.1	backfill/revegetation	$ 9,000
30	adit	.1	grate installation	$ 3,000
37	15' shaft	.1	backfill/revegetation	$ 2,000
			TOTAL	$1,346,700

to an outside company, due to the amount of earth movement required.

IX. ACKNOWLEDGEMENTS

Preparation of this report made possible by contributions from James Benally, Reclamation Specialist II, Mike Foley, Hydrologist, John M. O'Brien, Mining Engineer, and Regina Begay, Secretary.

X. REFERENCES

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APPENDIX A

Bureau of Land Management
Mining Claim Records

IN REPLY REFER TO:

United States Department of the Interior

(943) TR
A MC 88551-78

BUREAU OF LAND MANAGEMENT
ARIZONA STATE OFFICE
3707 N. 7th Street
Phoenix, Arizona 85014
(602) 241-5550

CERTIFIED MAIL--RETURN RECEIPT REQUESTED

May 23, 1986

Mining Claimant(s)
as Shown on the
Attached Sheet

Mining Claim(s)
as Shown on the
Attached Sheet

DECISION
MINING CLAIMS DECLARED ABANDONED

The Federal Land Policy and Management Act (FLPMA) of 1976, 43 U.S.C. 1744, and the implementing regulations in 43 CFR 3833.2, require an annual filing for all mining claims recorded with the Bureau of Land Management. The Act provides that failure to file evidence of annual assessment work or a notice of intention to hold by December 30 each year shall be deemed conclusively to constitute an abandonment of the claim and it is void by operation of law. The constitutionality of Section 314 of FLPMA was upheld on April 1, 1985 by the United States Supreme Court in U.S. et al. v. Lock et al., No. 83-1394.

The Bureau of Land Management records do not show receipt of either an affidavit of annual assessment work performed or a notice of intention to hold for the claim(s) listed on the attached sheet(s) during the 1984-1985 assessment year.

If you did timely file an affidavit or notice of intention to hold with the Bureau of Land Management during 1985, notify this office. Please furnish a copy of the affidavit showing the Bureau of Land Management date and time stamp or other evidence of receipt by our office.

Your proof must show the required document was timely filed with the Bureau of Land Management during 1985, otherwise, it will not be accepted. The evidence must be received in this office no later than 30 days from receipt of this decision. If the proof is not furnished during this 30 day period, the claim(s) will be removed from our records as abandoned and void.

John T. Mezes
Chief, Branch of Lands &
Minerals Operations

-86 closed - no appeal filed

ENTERED IN COMPUTER

D OWNER

MPSON GLADYS
305
TROSE CA 91020

OWNERS
MPSON CLAUDE
NLEY SUSAN

ZONA LEAD FILE NUMBER - 88551

AL	CLAIM NAME	LAST ASSMT.	BLM SERIAL NUMBER	CLAIM NAME	LAST ASSMT.
1	Copper Glance	1984			
52	ANTELOPE QUARRY	1984	88553	BLUE GOWN	1984
54	BUCKEYE	1984	88555	BUCKEYE #1	1984
56	BUCKEYE #2	1984	88557	BUCKEYE #3	1984
58	BUCKEYE #4	1984	88559	CALIFORNIA	1984
60	COPPEROPOLIST	1984	88561	COPPEROPOLIST	1984
62	COPPER REEF	1984	88563	COPPER REEF NO 1	1984
64	COPPER REEF NO 2	1984	88565	COPPER REEF NO 3	1984
66	COPPER REEF NO 4	1984	88567	COPPER REEF NO 5	1984
68	COPPER REEF NO 6	1984	88569	DANDY PLACER MNS	1984
70	DIGGER	1984	88571	GRAND PACIFIC	1984
72	HAPPY NEW YEAR	1984	88573	NESTOR	1984
74	PINTE	1984	88575	PIUTE	1984
76	PIUTE	1984	88577	SUNDAY	1984
78	TOM KEAN	1984			

24 N 9 E 32 SE

REPORT DATE: OCT 18, 1989 — UNITED STATES DEPARTMENT OF THE INTERIOR — PAGE NO: 1683

ADMINISTRATIVE STATE: ARIZONA — BUREAU OF LAND MANAGEMENT — PCN: LT892PP1

GEOGRAPHIC INDEX — MERIDIAN: GILA-SALT R.

ALL CLAIMS

-LEGAL DESCRIPTION- TWNSHP	RANGE	SEC	SUBDV	GEO CTY	BLM DIST	SERIAL NO.	CASE TYPE	CLAIM NAME/NUMBER	CLAIMANT(S)	LEAD FILE	COUNTY BOOK;PAGE	LOCATION DATE	LATEST ASSMT-YR	CASE CLOSED
24 N	9 E	32	SE		2	291451▲PL		QUEENSBERRY #21	FINDLAY LINDA BLEAK CAROLYN BINGHAM ALTON BINGHAM MERRILLIE BLEAK FLOYD PORTER DONNA RENFROW TRENT	291432		10/15/1988	0000	
25 N	9 E	33	NW		5	247016▲LD		P Z P #1	ZOLLINGER RICHARD	247016		12/15/1985	1986	6/27/1988
			NW		5	247017▲LD		P Z P #2		247016		12/15/1985	1986	6/27/1988
37 N	9 E	4	NE		5	88570 LD		DIGGER	THOMPSON GLADYS THOMPSON CLAUDE SHANLEY SUSAN	88551	00;53	5/07/1901	1984	5/23/1986
			NW		5	88573 LD		NESTOR	THOMPSON GLADYS THOMPSON CLAUDE SHANLEY SUSAN	88551	00;96	2/12/1902	1984	5/23/1986
			NW		5	88574 LD		PINTE	THOMPSON GLADYS THOMPSON CLAUDE SHANLEY SUSAN	88551	0;0	7/27/1900	1984	5/23/1986
38 N	9 E	20	SW		5	88559 PL		CALIFORNIA	THOMPSON GLADYS THOMPSON CLAUDE SHANLEY SUSAN	88551	00;357	10/30/1907	1984	5/23/1986
		22	SW		5	88560 PL		COPPEROPOLIST	THOMPSON GLADYS THOMPSON CLAUDE SHANLEY SUSAN	88551	00;41	8/29/1891	1984	5/23/1986
			SW		5	88561 LD		COPPEROPOLIST	THOMPSON GLADYS THOMPSON CLAUDE SHANLEY SUSAN	88551	00;56	4/30/1906	1984	5/23/1986
		23	SE		5	88563 LD		COPPER REEF NO 1	THOMPSON GLADYS THOMPSON CLAUDE SHANLEY SUSAN	88551	00;21	8/08/1899	1984	5/23/1986
			SE		5	88564 LD		COPPER REEF NO 2	THOMPSON GLADYS THOMPSON CLAUDE SHANLEY SUSAN	88551	00;22	8/08/1899	1984	5/23/1986
			SE		5	88565 LD		COPPER REEF NO 3	THOMPSON GLADYS THOMPSON CLAUDE SHANLEY SUSAN	88551	00;23	8/08/1899	1984	5/23/1986
		24	SW		5	88565 LD		COPPER REEF NO 3	THOMPSON GLADYS THOMPSON CLAUDE SHANLEY SUSAN	88551	00;23	8/08/1899	1984	5/23/1986
			SW		5	88566 LD		COPPER REEF NO 4	THOMPSON GLADYS THOMPSON CLAUDE SHANLEY SUSAN	88551	00;24	8/08/1899	1984	5/23/1986
			SW		5	88567 LD		COPPER REEF NO 5	THOMPSON GLADYS THOMPSON CLAUDE SHANLEY SUSAN	88551	00;25	8/08/1899	1984	5/23/1986

▲ ▲ DISCLOSURE▲ ▲ ALL INFORMATION RECEIVED IN THIS OFFICE MAY NOT YET BE LISTED ON THIS REPORT, NAMES AND ADDRESSES ARE ENTERED AS THEY APPEAR ON THE LOCATION NOTICE OR ARE ABBREVIATED TO FIT LIMITED SPACE; THEREFORE THEY MAY NOT APPEAR IN THE EXPECTED SEQUENCE. A BLANK LATEST ASSESSMENT YEAR IN THIS REPORT DOES NOT CONSTITUTE AN ABANDONED CLAIM. ▲ AFTER S/N INDICATES LAND STATUS CHECKED.

ADMINISTRATIVE STATE: ARIZONA

GEOGRAPHIC INDEX
ALL CLAIMS

MERIDIAN: GILA-SALT R.

LEGAL DESCRIPTION TWSHP	RANGE	SEC	SUBDV	CTY	GEO DIST	BLM SERIAL CASE NO.	TYPE	CLAIM NAME/NUMBER	CLAIMANT(S)	LEAD FILE	COUNTY BOOK;PAGE	LOCATION DATE	LATEST ASSMT-YR	CASE CLOSED
38 N	9 E	24	SW		5	2 88568	LD	COPPER REEF NO 6	THOMPSON GLADYS THOMPSON CLAUDE SHANLEY SUSAN	88551	00;26	8/08/1899	1984	5/23/1986
			SW		5	88572	LD	HAPPY NEW YEAR	THOMPSON GLADYS THOMPSON CLAUDE SHANLEY SUSAN	88551	00;273	9/26/1916	1984	5/23/1986
			SW		5	88576	LD	PIUTE	THOMPSON GLADYS THOMPSON CLAUDE SHANLEY SUSAN	88551	00;274	9/26/1916	1984	5/23/1986
		25	NE		5	88551	LD	COPPER GLANCE	THOMPSON GLADYS THOMPSON CLAUDE SHANLEY SUSAN		0;106	2/04/1892	1984	5/23/1986
			NW		5	88562	LD	COPPER REEF	THOMPSON GLADYS THOMPSON CLAUDE SHANLEY SUSAN	88551	00;27	8/08/1899	1984	5/23/1986
			NW		5	88572	LD	HAPPY NEW YEAR	THOMPSON GLADYS THOMPSON CLAUDE SHANLEY SUSAN	88551	00;273	9/26/1916	1984	5/23/1986
			NW		5	88576	LD	PIUTE	THOMPSON GLADYS THOMPSON CLAUDE SHANLEY SUSAN	88551	00;274	9/26/1916	1984	5/23/1986
			NW		5	88577	LD	SUNDAY	THOMPSON GLADYS THOMPSON CLAUDE SHANLEY SUSAN	88551	00;409	11/27/1897	1984	5/23/1986
			NW		5	88578	LD	TOM KEAN	THOMPSON GLADYS THOMPSON CLAUDE SHANLEY SUSAN	88551	00;467	5/23/1900	1984	5/23/1986
		26	NE		5	88553	LD	BLUE GOWN	THOMPSON GLADYS THOMPSON CLAUDE SHANLEY SUSAN	88551	0;468	5/24/1900	1984	5/23/1986
			NE		5	88577	LD	SUNDAY	THOMPSON GLADYS THOMPSON CLAUDE SHANLEY SUSAN	88551	00;409	11/27/1897	1984	5/23/1986
			NE		5	88578	LD	TOM KEAN	THOMPSON GLADYS THOMPSON CLAUDE SHANLEY SUSAN	88551	00;467	5/23/1900	1984	5/23/1986
		27	NW		5	88560	PL	COPPEROPOLIST	THOMPSON GLADYS THOMPSON CLAUDE SHANLEY SUSAN	88551	00;41	8/29/1891	1984	5/23/1986
			NW		5	88561	LD	COPPEROPOLIST	THOMPSON GLADYS THOMPSON CLAUDE SHANLEY SUSAN	88551	00;56	4/30/1906	1984	5/23/1986
		28	NW		5	88569	LD	DANDY PLACER MNG	THOMPSON GLADYS THOMPSON CLAUDE SHANLEY SUSAN	88551	00;227	6/12/1913	1984	5/23/1986

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ADMINISTRATIVE STATE: ARIZONA

BUREAU OF LAND MANAGEMENT

GEOGRAPHIC INDEX
ALL CLAIMS

MERIDIAN: GILA-SALT R.

LEGAL DESCRIPTION- TWSHP	RANGE	SEC	SUBDV	CTY	DIST	SERIAL NO.	CASE TYPE	CLAIM NAME/NUMBER	CLAIMANT(S)	LEAD FILE	COUNTY BOOK,PAGE	LOCATION DATE	LATEST ASSMT-YR	CASE CLOSED
58 N	9 E	29	NW		5	88559	PL	CALIFORNIA	THOMPSON GLADYS THOMPSON CLYDE SHANLEY SUSAN	88551	00;357	10/30/1907	1984	5/23/1986
			NE		5	88569	LD	DANDY PLACER MIG	THOMPSON GLADYS THOMPSON CLYDE SHANLEY SUSAN	88551	00;227	6/12/1913	1984	5/23/1986
			NE		5	88571	LD	GRAND PACIFIC	THOMPSON GLADYS THOMPSON CLYDE SHANLEY SUSAN	88551	00;97	4/14/1902	1984	5/23/1986
		33	SE		5	88570	LD	DIGGER	THOMPSON GLADYS THOMPSON CLYDE SHANLEY SUSAN	88551	00;53	5/07/1901	1984	5/23/1986
			SW		5	88573	LD	NESTOR	THOMPSON GLADYS THOMPSON CLYDE SHANLEY SUSAN	88551	00;96	2/12/1902	1984	5/23/1986
			SW		5	88574	LD	PINTE	THOMPSON GLADYS THOMPSON CLYDE SHANLEY SUSAN	88551	0;0	7/27/1900	1984	5/23/1986
			SW		5	88570	LD	DIGGER	THOMPSON GLADYS THOMPSON CLYDE SHANLEY SUSAN	88551	00;53	5/07/1901	1984	5/23/1986
1 N	10 E		NE		21	134531	LD	F B MINING #3	F B MINING	134529	1394;597	7/06/1981	1984	4/03/1986
					21	117063	LD	MUSIC #2	BURNETT THOMAS JR KILLEN WALDO JR	117062		12/06/1980	0000	7/02/1985
			SW		21	117065	LD	MUSIC #4	BURNETT THOMAS JR KILLEN WALDO JR	117062		12/06/1980	0000	7/02/1985
			NW		21	192291	LD	LD 17	BILLBREY LOST DUTCHMA	192282		3/10/1983	0000	6/10/1983
			SW		21	209046	LD	BIDGIE #1	RESER AL EDWARDS MONTY	209045		11/03/1983	0000	5/07/1986
			SE		21	209049	LD	YELLOW BIRD #2	RESER AL EDWARDS MONTY	209045		11/03/1983	1988	
			NW		21	217894	LD	JUDA	KONOKOVVE DAVID KARABINUS JULIUS		1 \\	12/30/1983	1987	4/24/1989
		4	E2		21	117062	LD	MUSIC #1	BURNETT THOMAS JR KILLEN WALDO JR			12/06/1980	0000	7/02/1985
			SE		21	117064	LD	MUSIC #3	BURNETT THOMAS JR KILLEN WALDO JR	117062		12/06/1980	0000	7/02/1985
			NE		21	117066	LD	MUSIC #6	BURNETT THOMAS JR KILLEN WALDO JR	117062		12/06/1980	0000	7/02/1985
			SW		21	207748	PL	MAJOR	CHURCH OF LABORET			10/21/1983	1986	3/14/1988
			SE		21	207748	LD	MAJOR		207748		10/21/1983	1986	3/14/1988
			SW		21	211280	LD	MAJOR II				12/12/1983	1986	3/14/1988
			SW		21	211281	LD	MAJOR III		211280		12/12/1983	1986	3/14/1988
			NE		21	211282	LD	MAJOR IV		211280		12/12/1983	1986	3/14/1988

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APPENDIX B

LETTER TO NAMLRD

DEPARTMENT OF HEALTH & HUMAN SERVICES

Public Health Service
Health Services Administration

Navajo Area
Indian Health Service
PHS Indian Hospital
Tuba City, Arizona 86045

April 03, 1985

hil Zahne, Program Manager
avajo Reclamation Program
.O. Box 1069
t. Defiance, AZ 86504

ear Mr. Zahne:

The Office of Environmental Health (OEH) has identified some bandoned mine hazards in the Coppermine Chapter area. As I had nformed you during our April 2, 1985 telephone conversation, I ave not been able to find an agency which can assist Coppermine hapter in eliminating these hazards.

Your interest in surveying the area and finding assistance o correct the hazards is appreciated. Please find enclosed a eport dated February 28, 1985 entitled "Community Abandoned ine Hazard Survey (Coppermine Chapter)" which describes the rea and locates specific hazards. Of major concern is the xploration hole located along the BIA road connecting Gap and age. This site is identified a location 5 on the map.

Alfred Long, Chapter Manager informed me that a chapter esolution requesting assistance to correct the hazards may have een initiated several months ago. Mr. Long can be contacted at he Coppermine Chapter House or at the following address for dditional information:

Alfred Long, Chapter Manager
Coppermine Chapter
P.O. Box 3410
Page, Arizona 86040

If I can be of any additional assistance, please contact me t (602) 283-6211.

Sincerely,

Stephen Beran
District Sanitarian
Tuba City District

SB/jh
xc: Cay Godffring
Alfred Long
File (2) - SBeran
chrono

APPENDIX C

Coppermine Chapter Resolution

P.O. Box 1416 Page, Arizor 06040

1

RESOLUTION OF COPPERMINE CHAPTER

REQUESTING THE DEPARTMENT OF SURFACE MINING, DIVISION OF RESOURCES TO CONSIDER AND INCLUDE COPPERMINE MINING AREAS IN THE ABANDONED MINES AND RECLAMATION PROJECTS

Chapter Officer

President
Alfred Long
Vice President
Lola Smith
Secretary
Wilford Lane

Council Delegate
Floyd Stevens

Grazing Committee
Allen Fowler

COPP-88-03-013

WHEREAS:

1. The Coppermine Chapter is a certified and recognized entity of the Navajo Tribal government with the authority and responsibility to act in the best interest and general welfare of its residents; and

2. There are approximately 34 privately-owned copper mining claims established prior to the westerly extension of the Navajo Reservation in 1934; and

3. These mines have since played out with the cessation of any mining activity in 1968 thereby leaving considerable abandoned mine tailings and hazardous pits; and

4. The Navajo Nation has recently been awarded $30 million for abandoned coal and non-coal mines located in the perimeters of the Navajo Nation for reclamation projects; and

6. The Coppermine Chapter desires to be included in the abandoned mines reclamation projects to ameliorate the existing conditions of these mine tailings and pits for reclamation and safety purposes.

NOW, THEREFORE, BE IT RESOLVED THAT:

1. The Coppermine Chapter respectfully requests the Department of Surface Mining, Division of Resources to consider and include Coppermine mining areas in the abandoned mines and reclamation projects.

C E R T I F I C A T I O N

We hereby certify that the foregoing resolution was duly considered by the Coppermine Chapter of the Navajo Nation, at which a quorum was present and that same was passed by a vote of 27 in favor and 00 opposed this 12th day of MARCH, 1988.

Chapter President, Alfred Long

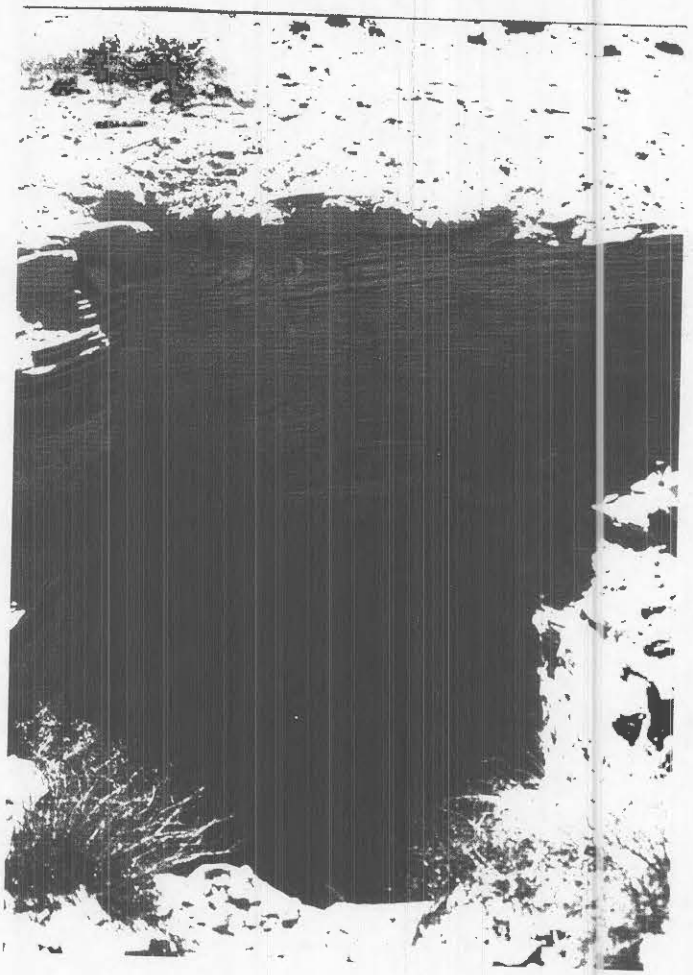
Chapter Secretary, Wilford Lane

Vice-President, Lola Smith

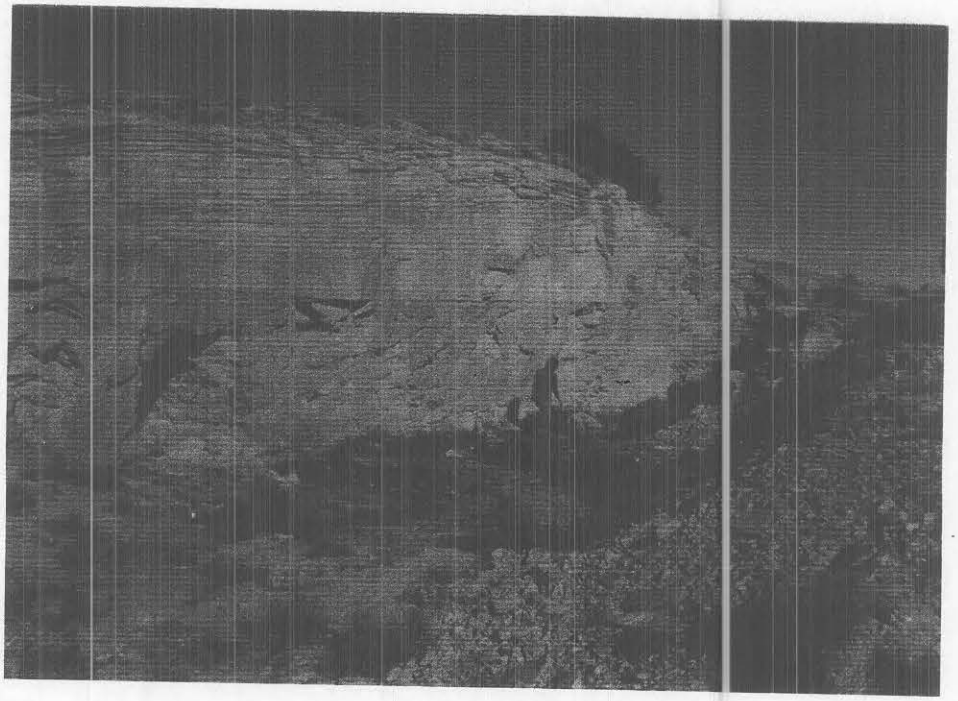
Council Delegate, Floyd Stevens

APPENDIX D

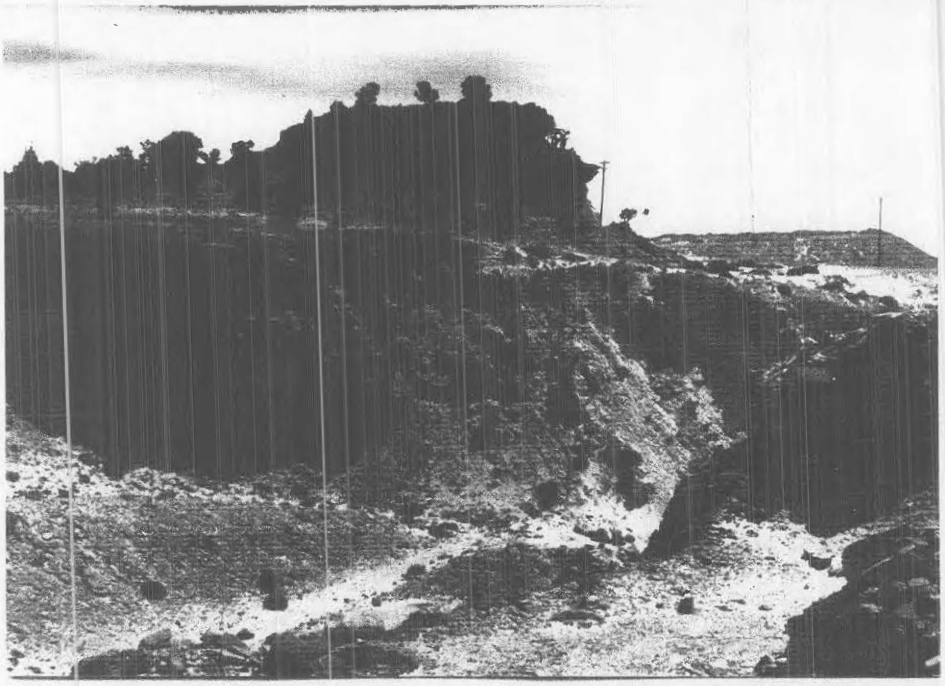
AML SITE PHOTOGRAPHS



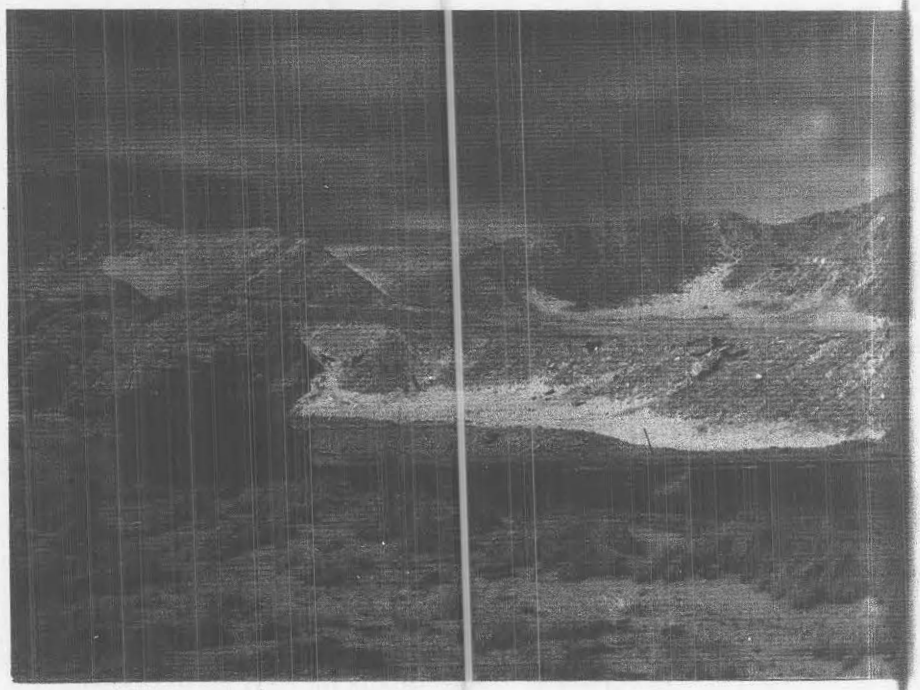
Site No. 7 Vertical Shaft



Site No. 7 Large trench with 25' highwall

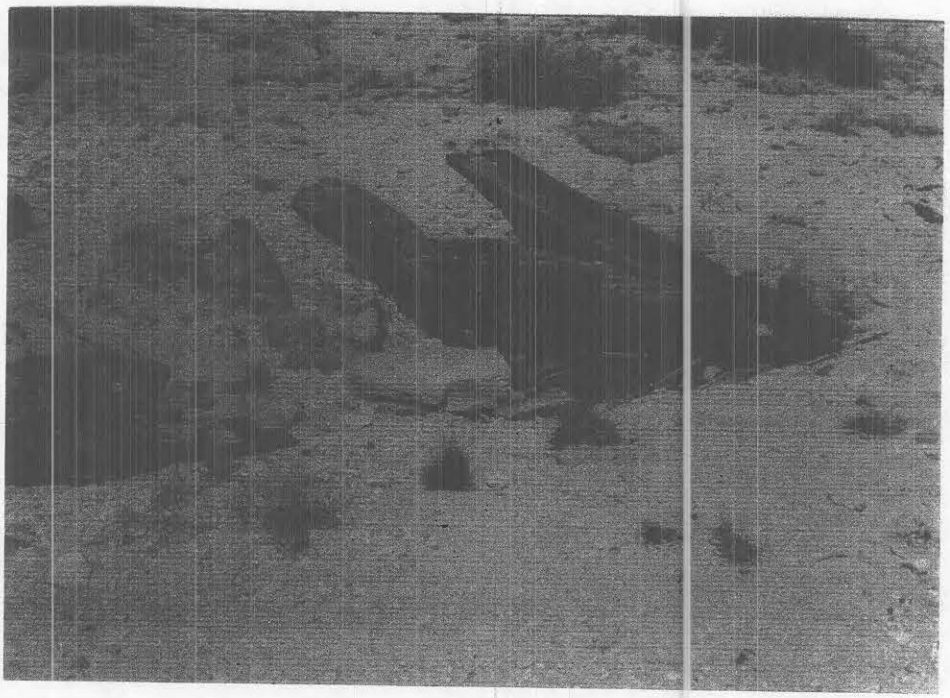


Site No. 8 West Highwall of large pit

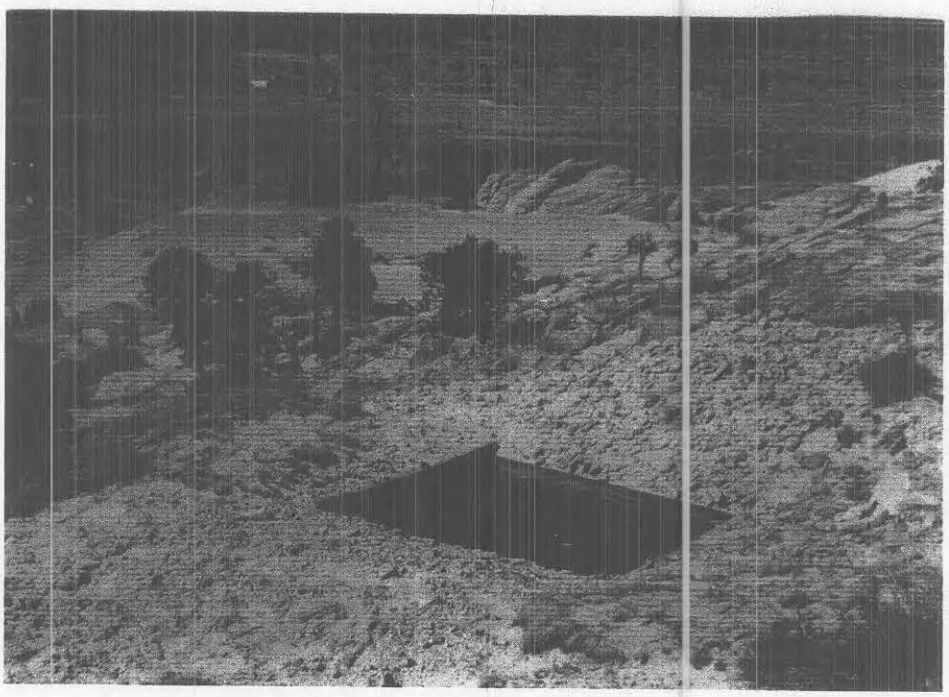


Site No. 8 Large Spoil south of large pit

Site No. 8 Abandoned mill site, south of large pit



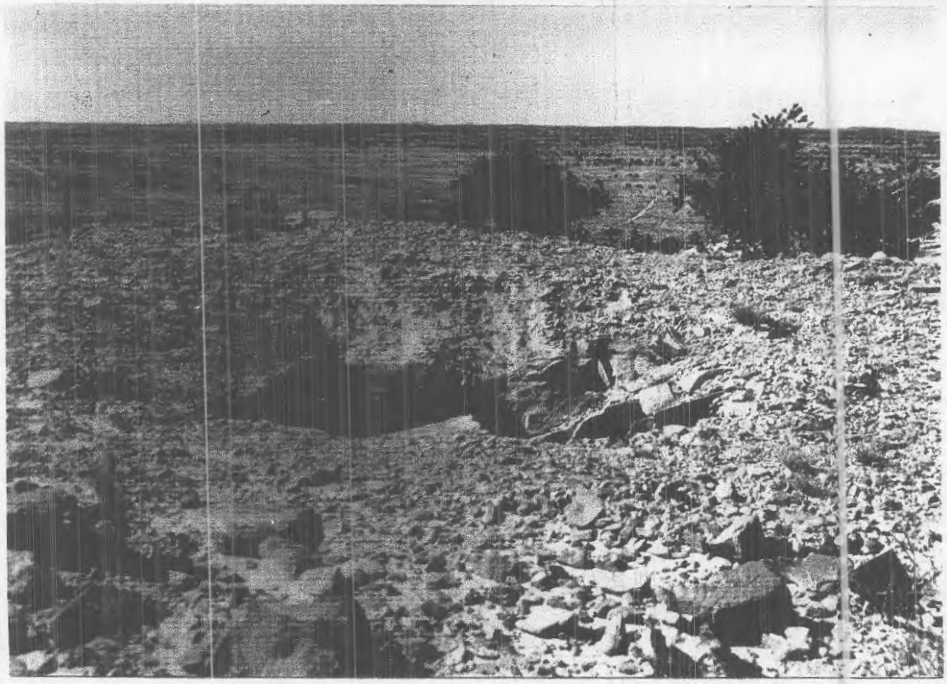
Site No. 9 15' Vertical Shaft



Site No. 10 36' Vertical Shaft
Chapter House and local residence
in background.

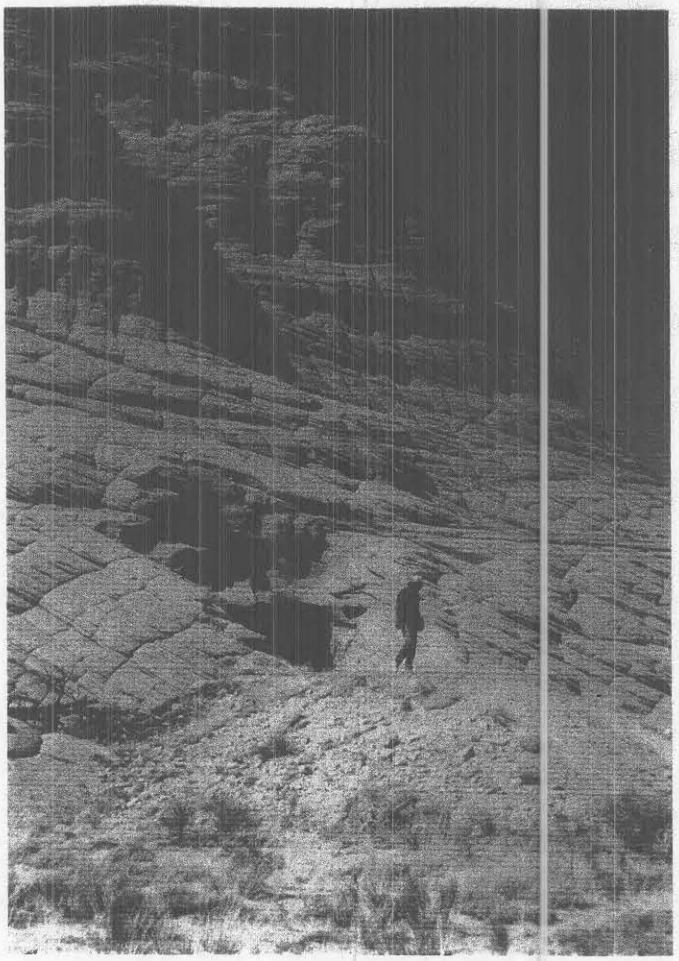
Site No. 12 53'
vertical shaft

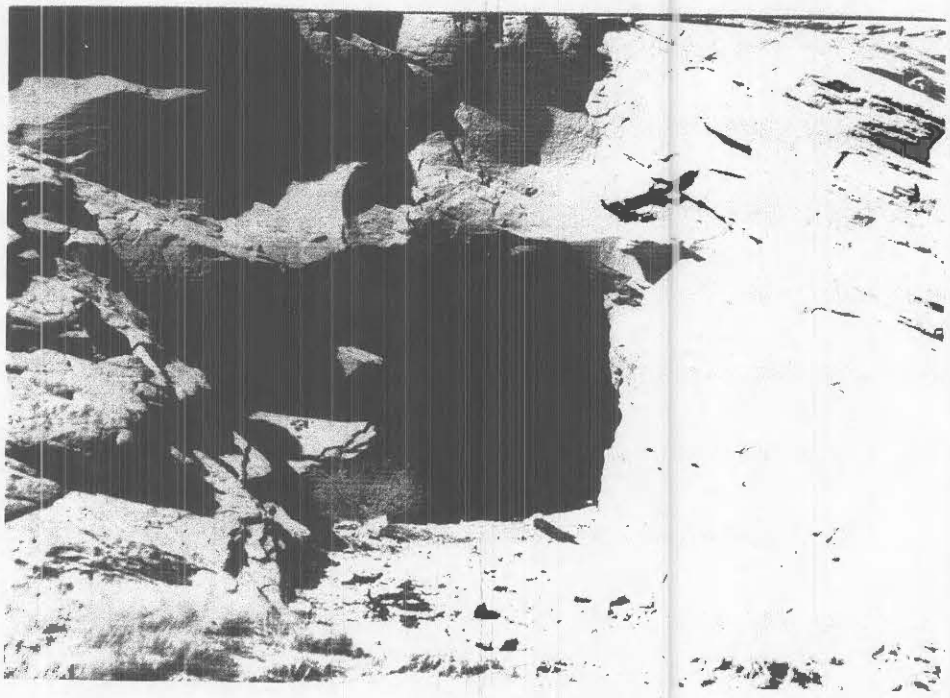
Site No. 12 53'
vertical shaft



Site No. 12 46'
vertical shaft

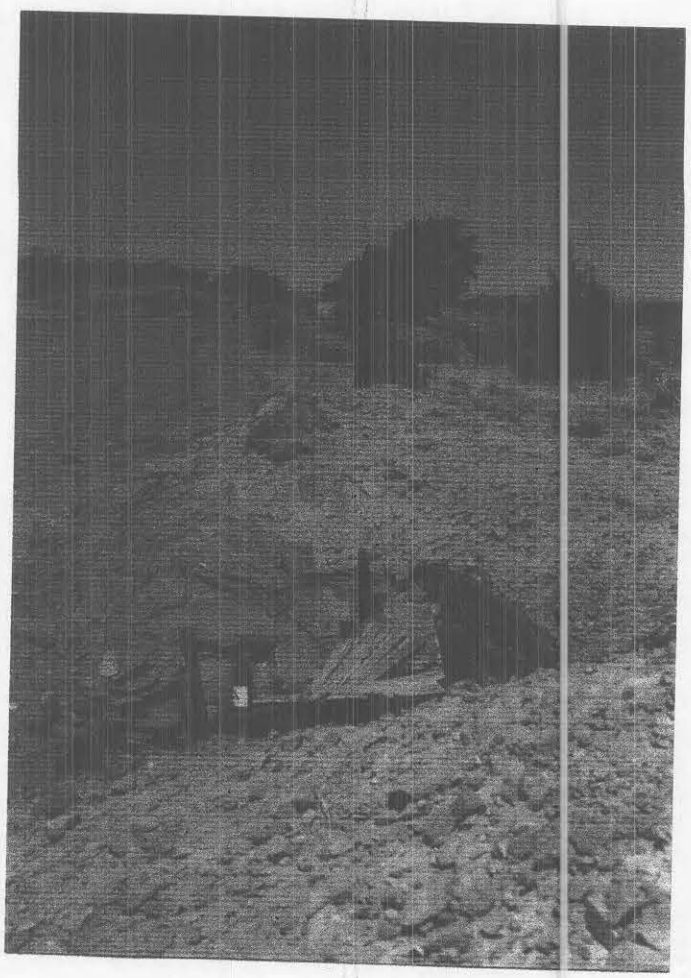
53'
ıft



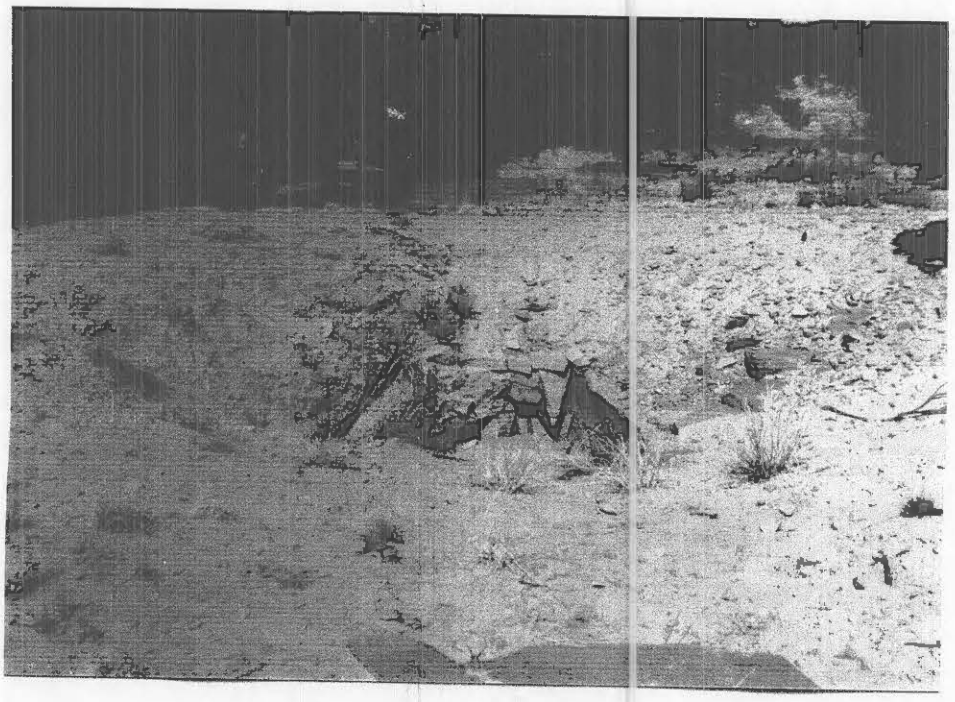


46'
t

Site No. 13 Adit approximately 100' long

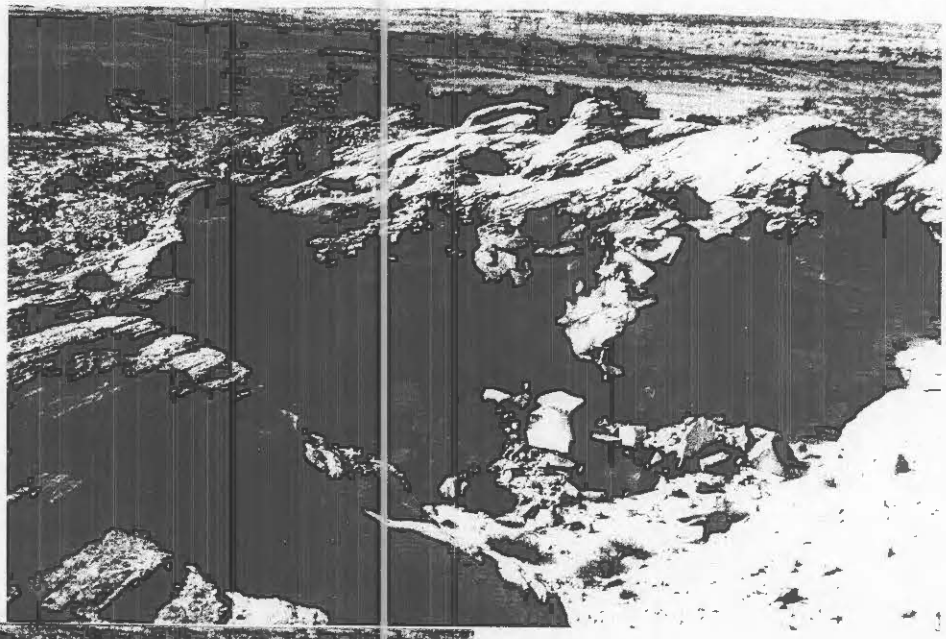


Site No. 16 4' shaft
Bus stop in background



Site No. 16 8' shaft

Site No. 21 This site has 15 pits and 3 trenches. This pit is the largest feature (80' x 60' x 25') on this site.



Site No. 21 A series of pits and trenches

Site No. 21 Pits range in depth from 6 to 25'